

PSG 118, *Aretaon asperrimus* (Redtenbacher)

Paul Jennings, 14, Grenfell Avenue, Sunnyhill, Derby, DE3 7JZ. U.K..

Taxonomic and distribution notes by P.E. Bragg.

Illustration of male by E. Newman.

Key words

Phasmida, *Aretaon asperrimus*, Breeding, Rearing.

Classification

This species was originally described as *Obrimus asperrimus* by Redtenbacher in 1906. In 1938 Rehn & Rehn established the new genus *Aretaon* (1938: 419), with *asperrimus* as the type species.

I have examined the type specimens of this species and *A. muscosus* Redtenbacher, which are all in Vienna, and I found that the type specimens of *A. asperrimus* are all adults while those of *A. muscosus* are all nymphs. *A. muscosus* is distinguished by having more prominent spines, particularly on the front tibiae and the top of the abdomen. However, having reared *A. asperrimus* it is clear that nymphs of this genus are very spiny and these spines in particular are reduced when the insect becomes adult. It is therefore quite likely that *A. asperrimus* and *A. muscosus* are the same species. This possibility was considered and rejected by Günther (1935: 123) but as he had not reared them he would not have known that the spines are reduced when the insects become adult. The species in culture is clearly *A. asperrimus*, however it has smaller spines than the type specimens so clearly the species is variable. The type specimens of *A. muscosus* are much more spiny than those in culture, I cannot therefore be certain that *A. asperrimus* and *A. muscosus* are the same species. As there is a strong possibility that they are the same species, I am listing the published references and distribution records for both species.

Obrimus asperrimus Redtenbacher, 1906: 41, pl. I figs 4 & 5.

Obrimus asperrimus Redtenbacher, Dohrn, 1910: 398.

Obrimus asperrimus Redtenbacher, Günther, 1935: 123.

Aretaon asperrimus (Redtenbacher), Rehn & Rehn, 1938: 421.

Aretaon asperrimus (Redtenbacher), Bragg, 1991a: 76-80.

Aretaon asperrimus (Redtenbacher), Bragg, 1991b: 18-21.

Obrimus muscosus Redtenbacher, 1906: 41.

Obrimus muscosus Redtenbacher, Günther, 1935: 123.

Aretaon muscosus (Redtenbacher), Rehn & Rehn, 1938: 422.

Distribution

A. asperrimus was originally described from Mt Kinabalu, Sabah, Borneo. It has also been recorded from Labuan, off the north coast of Borneo (Günther, 1935: 123), and from Luzon in the Philippines (Rehn & Rehn, 1938: 422).

A. muscosus is recorded from: Mt Kinabalu (Redtenbacher 1906: 41) and Labuan (Rehn & Rehn, 1938: 422). I found a single male specimen at Kuala Belalong in the Temburong District of Brunei in August 1991, in addition to those mentioned below.

Origin of culture

The culture originates from several specimens collected at Poring Hot Springs, Mount Kinabalu National Park, Sabah, by Phil Bragg, C L Chan and myself in July 1992.

Geographical and climatic details

Poring Hot Springs is at an altitude of about 2500 feet (760 meters) above sea level. The temperature during the evening that we were there was 25°C and the humidity was 70-80%.

Adults

Both sexes are wingless. Table 1 contains the major measurements of my wild caught specimens. Measuring seven male and four female first generation captive bred specimens gave the following range of sizes: males 47-58mm, females 78-81mm.

Female (Fig 1)

The adult female is a plump, robustly built, non stick-like insect. On top of her head, there are two crest like ridges. These ridges consist of a series of spines, which are fused at the base. The top centre region of the head is covered with a number of small black shiny, pimple-like protuberances. The eyes are black, and mottled with yellow. Her antennae are moderately long and ordinary.

On the dorsal surface of the thorax there are four symmetrically positioned, outwardly pointing raised areas. This is a very characteristic feature, and distinguishes this species from any other in culture. These raised areas consist of a cluster of spines with a common base, each terminating with a pointed conical spine, about 2mm long. These spines, which resemble thorns of a hawthorn bush, are burgundy in colour. There are also four other pairs of spines on the upper thorax, two pairs on the prothorax and two pairs on the mesothorax.

In comparison to her thorax, her abdomen is quite smooth. The dorsal surface of the abdominal segments

have three rows of backwardly pointing spines, one spine, per row, per segment. The abdomen terminates with a upwardly curved, sharply pointed ovipositor, about 10mm in length. The top and

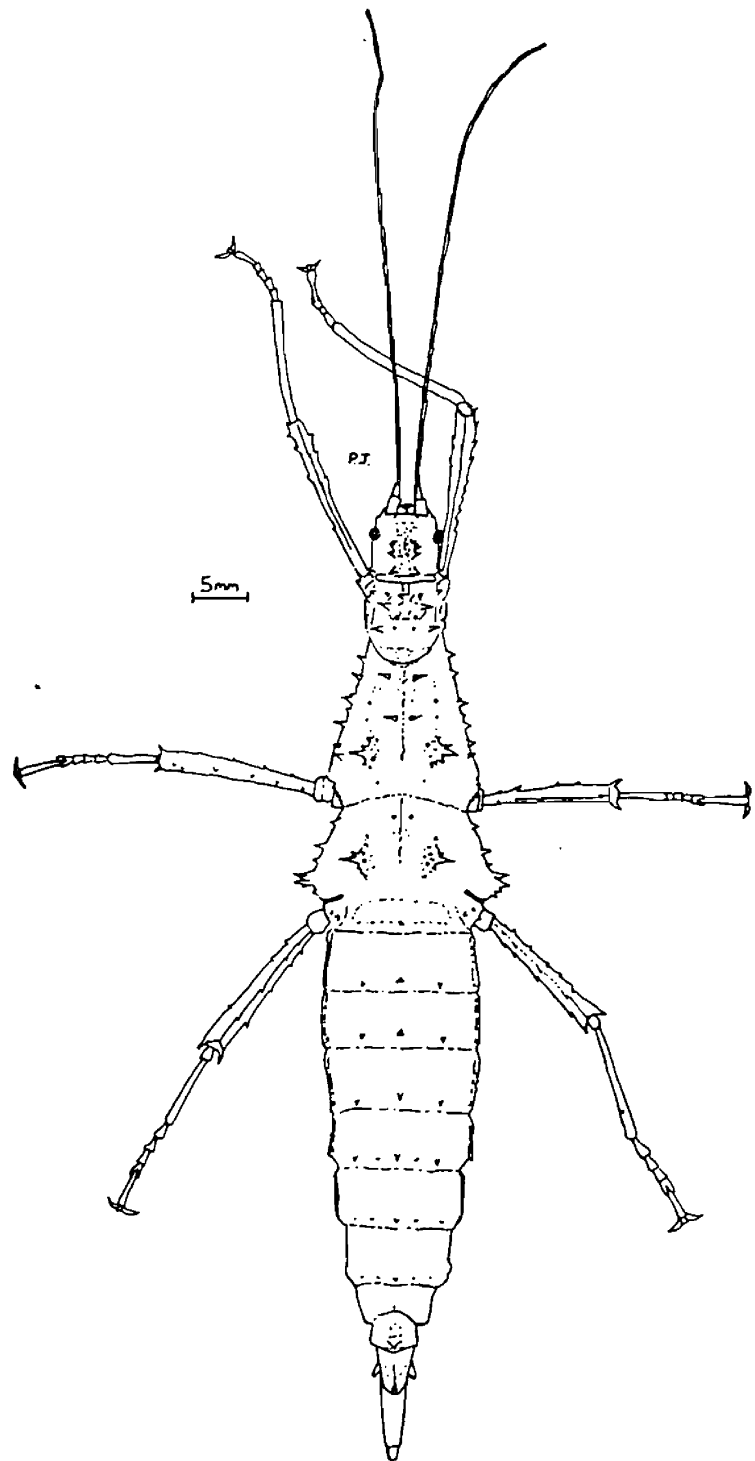


Figure 1. Female *A. asperrimus*.

bottom parts match each other closely. The cerci are just visible.

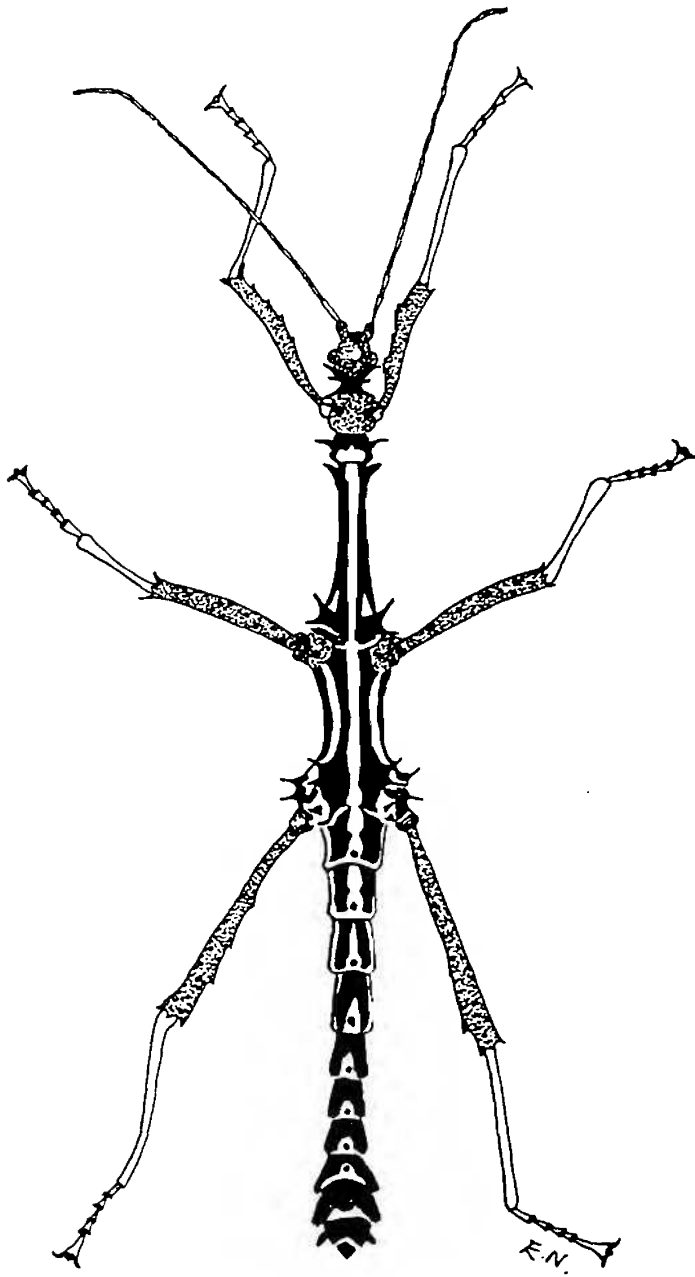


Figure 2. Male *A. asperrimus*.

more thorny appearance. The tip of his abdomen is blunt and bulbous. The legs and their spine formations are similar in appearance to those of the female.

His ground colour is a dark chocolate brown. There is a central beige dorsal stripe and another along each side, running along the thorax and part of the abdomen. The entire under surface of his thorax is beige apart from the small, randomly distributed dark pimples. The under surface of his abdomen is a light tan.

The entire under surface of her body is spineless, but there is a scattering of small dark tubercles. All three pairs of legs are thick and strong and similar in appearance. The femurs are spined. The hind legs feature the largest spines, but they are not sufficiently strong to inflict pain on humans.

There is little colour variation between adult females reared in identical conditions. The base colour of the dorsal surface is a dark chocolate brown. This base colour is interspersed with lighter beige markings and patterning, including a fine central stripe on her thorax. The under side of the body is a lighter tan colour, particularly so on her thorax. The coloration of specimens that I have reared in captivity is very similar to that of the wild caught specimens. It has been noticed that adults reared in drier conditions are lighter in colour.

Male (Fig 2)

The male is a smaller, more slender, but a robustly built insect. The general formation and location of his spines are very similar to those of the female. The exceptions to this are the presence of only three pairs of spines on the thorax, instead of four and only a single row of spines on the upper surface of the abdomen. The four raised areas are similar in size to those of the female, giving the male a

An interesting feature of this species is that the male is frequently observed riding around on the back of the female (as was the adult pair that I found in Sabah), but without any signs of mating taking place.

Eggs (Fig 3)

This is a slightly flattened cylinder, almost flat at the operculum end and approximately hemispherical at the other. The surface is smooth and a matt charcoal grey. Typical dimensions are length 5.5mm, depth 3mm and width 2.5mm.

At eight times magnification the surface can be seen to be pitted, like those of *Acrophylla wuelfingi*, but much finer. The micropylar plate has the curious four arm shape, similar to the related *Heteropteryx dilatata* and *Haaniella* spp. The micropylar plate has two forms.

Type 1 The two bottom arms of the micropylar plate go all the way round and fuse together.

Type 2 The two bottom arms of the micropylar plate do not go all the way round.

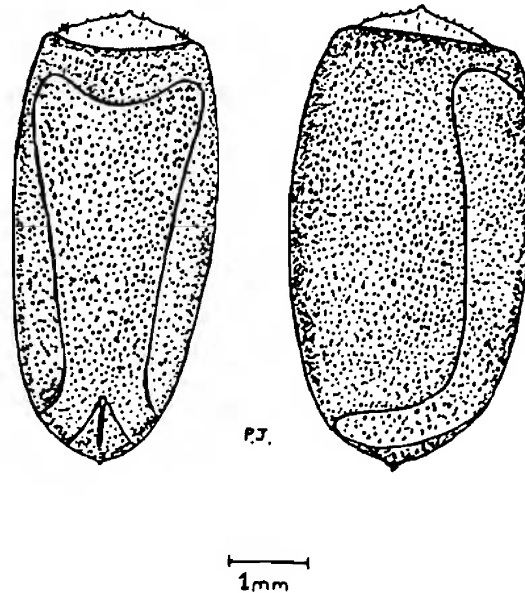


Figure 3. Egg of *A. asperrimus*.

The eggs are buried in the substrate. Eggs are often found in the tissue paper used to plug gaps between the food plant and water container.

The female begins to lay eggs about four to five weeks after becoming adult. The eggs are laid at a rate of about one or two per 24 hours, presumably they are deposited individually. The eggs take approximately 12 to 13 weeks to hatch when kept at 22-26°C.

Nymphs

Newly hatched nymphs are very lively and start to feed easily. At this stage there is little colour variation, a medium brown, and it is not possible to determine the sex.

The nymphs grow quite quickly. I recorded twenty two days between the first and second instar. By about the third instar it is easy to distinguish sexes, the most obvious differences being the developing ovipositor at the tip of the female's abdomen. As the nymphs mature, they gain markings, becoming more colourful and showing some variation. The penultimate female instar is perhaps the most beautiful stage. The dorsal surface has an almost velvet like appearance and is intricately marked, with colours ranging from dark brown to fawn.

Approximately 85% of nymphs survive to adulthood. Males mature more quickly than females, progressing through one instar less. The adults collected lived for about nine months. First generation adults lived for a similar period of time.

Defence

The primary form of defence appears to be remaining still and relying on camouflage. Presumably they would be best suited to resting amongst dead twigs and branches or on bare branches on living trees. Once disturbed both nymphs and adults can move quickly until they find an alternative place to hide. Other members have noted that this species likes to hide whilst resting, for example inside a cardboard tube.

Young nymphs arch their abdomens up over their backs, as do other phasmids, feigning a threat to sting. When handled, I have observed that adult females excrete a clear fluid from a pair of glands on the prothorax. This does not appear to cause any irritation or have any smell.

Lengths (mm)	Male	Female
Body & Head	55	86
Antenna	38	46
Fore legs	31	40
Mid legs	28	35
Hind legs	37	48

Table 1. Sizes of my wild caught *Aretaon asperrimus*.

Foodplants

I have only tried bramble, oak and evergreen oak, all of which was readily eaten. The specimens collected in Sabah were found on a variety of plants, including a plant similar in appearance to bramble.

General comments

An easy species to rear when kept at about 24 to 30°C and fairly humid. I have used cylinder cages with minimal ventilation to rear several generations. It is a lovely medium sized, non stick-like insect, and suitable for beginners.

References

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